

## WHAT IS CLAIMED IS:

1. A storage system comprising:

a plurality of storage devices each including a storage  
5 medium for storing data;

a controller for controlling said plurality of storage  
devices; and

means for notifying an external device of a change in  
data stored in a specific one of said plurality of storage devices,  
10 said external device being connected to said controller.

2. The storage system as claimed in claim 1, further  
comprising:

an interface for externally selecting said specific one  
of said plurality of storage devices, wherein said change in  
15 said data stored in said specific one of said plurality of storage  
devices is to be notified to said external device.

3. A storage system comprising:

a plurality of storage devices each including a storage  
medium for storing data;

20 a controller for controlling said plurality of storage  
devices; and

means for notifying an external device of a change in  
a state of a specific one of said plurality of storage devices,  
said external device being connected to said controller.

25 4. The storage system as claimed in claim 3, further

comprising:

an interface for externally selecting said specific one of said plurality of storage devices, wherein said change in said state of said specific one of said plurality of storage  
5 devices is to be notified to said external device.

5. A computer system comprising:

a connecting device for transmitting/receiving a control signal and data to/from a storage system, said connecting device being connected to said storage system; and

10 an interface for receiving a notification indicating that data stored in a specific storage device within said storage system has been changed, said storage system being connected to said interface through said connecting device.

6. The computer system as claimed in claim 5, further  
15 comprising:

an interface for selecting a storage device which is to receive a notification indicating that data has been changed, and indicating said selected storage device to said storage system.

20 7. A computer system comprising:

a connecting device for transmitting/receiving a control signal and data to/from a storage system, said connecting device being connected to said storage system; and

an interface for, from said storage system, receiving  
25 a notification indicating that a state of a controller within

said storage system has been changed, said storage system being connected to said interface through said connecting device.

8. A data control method for duplicating data in a system, said system comprising: a primary system including a first  
5 computer system and a first storage system connected to said first computer system; and a secondary system including a second computer system and a second storage system connected to said second computer system;  
wherein at least said first storage system and said second  
10 storage system are connected to each other;

said data control method comprising the steps of:  
into a specific storage device within said first storage system, registering (storing) a log based on which an update  
of data stored in said first storage system can be recreated,  
15 said data being produced as a result of processing performed by said first computer system;

copying said log registered in said specific storage device within said first storage system to a specific storage device within said second storage system, said specific storage  
20 device within said second storage system being set to duplicate said log;

updating said data stored in said first storage system, said data being produced as a result of said processing performed by said first computer system;  
25 notifying said second computer system of a change in data

stored in said specific storage device within said second storage system, said change being made as a result of performing said copying step;

reading said change in said data stored in said specific  
5 storage device within said second storage system, this step being performed by said second computer system; and

updating a duplicate of said data (stored in said first storage system) based on a log read by said second computer system, said duplicate being stored in said second storage system.

10 9. The data control method as claimed in claim 8, wherein said log based on which said update of said data stored in said first storage system can be recreated includes one or a plurality of transactions and information for specifying a start and an end of each transaction, said data being produced as a result  
15 of said processing performed by said first computer system;

10. The data control method as claim in claim 8, wherein into said specific storage device within said first storage system, said registering step registers said log based on which said update of said data stored in said first storage system  
20 can be recreated, in log input/output units specified by said first computer system, said data being produced as a result of said processing performed by said first computer system.

11. The data control method as claimed in claim 8,  
wherein: said registering step and said copying step are  
25 performed in synchronization with each other;

into said specific storage device within said first storage system, said registering step registers said log based on which said update of said data stored in said first system can be recreated, said data being produced as a result of said processing performed by said first computer system; and

5       said copying step copies said log registered in said specific storage device within said first storage system to said specific storage device within said second storage system, said specific storage device within said second storage system being  
10   set to duplicate said log.

12. The data control method as claimed in claim 8, wherein said notifying step notifies said second computer system of said change in said data stored in said specific storage device within said second storage system at regular time intervals.

15       13. The data control method as claimed in claim 8, wherein said notifying step notifies said second computer system of said change in said data stored in said specific storage device within said second storage system by controlling said second storage system through an interface for controlling said second storage  
20   system from said first storage system.

14. The data control method as claimed in claim 13, wherein said control of said second storage system is performed according to an instruction from said first computer system.

15. The data control method as claimed in claim 8, further  
25   comprising steps of:

detecting shutdown of said first computer system; and  
taking over application processing from said first  
computer system, this step being performed by said second  
computer system.

5           16. The data control method as claimed in claim 8, further  
comprising steps of:

detecting shutdown of said first computer system;  
taking over application processing from said first  
computer system, this step being performed by said second  
10 computer system; and

reading a log from said specific storage device within  
said second storage system and updating data based on said read  
log, this step being performed by said second computer system.

15           17. The data control method as claimed in claim 15,  
further comprising steps of:

restoring said first computer system after said second  
computer system has taken over said application processing; and

switching the functions of said primary system and said  
secondary system so as to create a duplicate of a database stored  
20 in said second storage system and store said duplicate in said  
first storage system.

18. A data control method for duplicating data in a system,  
said system comprising: a primary system including a first  
computer system and a first storage system connected to said  
25 first computer system; and a secondary system including a second

computer system and a second storage system connected to said second computer system;

wherein at least said first storage system and said second storage system are connected to each other;

5       said data control method comprising the steps of:

into a specific storage device within said first storage system, storing a log based on which an update of data stored in said first storage system can be recreated, said data being produced as a result of processing performed by said first  
10   computer system;

copying said log stored in said specific storage device within said first storage system to a specific storage device within said second storage system, said specific storage device within said second storage system being set to duplicate said  
15   log;

updating said data stored in said first storage system, said data being produced as a result of said processing performed by said first computer system;

detecting a change in data stored in said specific storage device within said second storage system, said change being made as a result of performing said copying step, this detecting step being performed by said second computer system;

reading said change in said data stored in said specific storage device within said second storage system, this step  
25   being performed by said second computer system; and

reading a log and updating a duplicate of said data (stored in said first storage system) based on said log, said duplicate being stored in said second storage system, this step being performed by said second computer system.

5           19. The data control method as claimed in claim 18, wherein said log based on which said update of said data stored in said first storage system can be recreated includes one or a plurality of transactions and information for specifying a start and an end of each transaction, said data being produced  
10 as a result of said processing performed by said first computer system.

          20. The data control method as claimed in claim 18, wherein into said specific storage device within said first storage system, said registering step registers said log based  
15 on which said update of said data stored in said first storage system can be recreated, in log input/output units specified by said first computer system, said data being produced as a result of said processing performed by said first computer system.

20           21. The data control method as claimed in claim 18, wherein:

          said registering step and said copying step are performed in synchronization with each other;

          into said specific storage device within said first  
25 storage system, said registering step registers said log based



on which said update of said data stored in said first system can be recreated, said data being produced as a result of said processing performed by said first computer system; and

5       said copying step copies said log registered in said specific storage device within said first storage system to said specific storage device within said second storage system, said specific storage device within said second storage system being set to duplicate said log.

22. The data control method as claimed in claim 18,  
10   further comprising steps of:

      detecting shutdown of said first computer system; and  
      taking over application processing from said first computer system, this step being performed by said second computer system.

15       23. The data control method as claimed in claim 18, further comprising steps of:

      detecting shutdown of said first computer system;  
      taking over application processing from said first computer system, this step being performed by said second  
20   computer system; and

      reading a log from said specific storage device within said second storage system and updating data based on said read log, this step being performed by said second computer system.